

-- only to polypropylenes --.

Page 10: line 27, change "its" to -- their --.

Page 10: line 28, change "depend" to -- depends --.

Page 12: line 21, change "analog" to -- analogues --.

Page 14: line 7, after "slurry" insert -- , gas --.

Page 14: line 16, change " $(C_2H_{4-x}R_x)$ " to --  $(C_5H_{4-x}R_x)$  --.

Page 14: line 24, before "other" delete -- any --.

Page 15: line 2, before "other" delete -- any --.

Page 15: line 2, after "containing" insert -- a --.

Page 15: line 17, before "other" delete -- any --.

Page 16: lines 11-12, change " $R^4(R^5-Al-O)_m-AlR^6$ " to  
--  $R^4(R^5-Al-O)_m-AlR^6$  --.

Page 17: line 18, change " $C_5-C_{20}$ " to --  $C_4-C_{20}$  --.

Page 18: line 28, before "other" delete -- any --.

Page 19: line 6, before "other" delete -- any --.

Page 19: line 7, before "Lewis" insert -- a --.

Page 19: line 23, before "other" delete -- any --.

Page 20: line 21, change "silane" to -- silyl --.

Page 21: line 10, change "diisoproylamide" to

-- diisopropylamide --.

Page 22: line 11, change "Column" to -- column --.

Page 22: lines 13-21, change "Suitable hydrocarbyl and substituted hydrocarbyl radicals, which may be substituted as an R' group for at least one hydrogen atom in the heteroatom J ligand group, will contain from 1 to about 20 carbon atoms and include straight and branched alkyl radicals, cyclic hydrocarbon radicals, alkyl-substituted cyclic hydrocarbon radicals, aromatic radicals and alkyl-substituted aromatic radical, halogen radicals, amido radicals, phosphido radicals and the like." to ~~in~~ Suitable R' radicals of the heteroatom J ligand are

b1  
Cont'd

independently a hydrocarbyl radical selected from a group consisting of 1 to about 20 carbon atoms and include straight and branched alkyl radicals, cyclic hydrocarbon radicals, alkyl-substituted cyclic hydrocarbon radicals, aromatic radicals and the like; substituted C<sub>1</sub>-C<sub>20</sub> hydrocarbyl radicals wherein one or more hydrogen atom is replaced by a halogen radical, an amido radical, a phosphido radical, an alkoxy radical and an alkylborido radical, or a radical containing a Lewis acidic or basic functionality, and the like.

Page 23: line 6, change "analogous" to -- analogues --.

Page 23: line 8, after "are" change ";" to -- : --.

Page 23: line 24, change, "is" to -- are --.

Page 23: line 33 to Page 24: line 1, change  
"Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-t Bu)ZrCl<sub>2</sub>" to -- Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-t-Bu)ZrCl<sub>2</sub> --.

Page 24: line 6, change "dimethylsilyclopentadienyl-t-butylamidochloro" to -- dimethylsilylcyclopentadienyl-t-butylamidodichloro --.

Page 26: line 3, after "compound" insert -- , --.

Page 26: line 4, change "becomes" to -- is --.

Page 26: line 12, change "becomes" to -- is --.

Page 28: line 31, after "slurry" insert -- , gas --.

Page 29: line 3, change "Where" to -- When --.

Page 29: line 9, change "Or, if" to -- If --.

Page 30: line 18, after "separately" insert -- , --.

Page 30: line 25, after "invention" insert -- , --.

Page 31: line 13, change "18,000 to 1" to -- 18,000:1 --.

Page 31: line 18, change "copolymer" to -- polymer --.

Page 33: line 2, change "<sup>13</sup>CNMR" to -- <sup>13</sup>C NMR --.

Page 33: line 16, change "Z. Naturforich" to  
-- Z. Naturforsch --.

Page 33: line 16, change "Other lithiated" to  
 -- Lithiated --.

Page 33: line 26, change "Sherring" to -- Schering --.

Page 33: line 32, change "thf" to -- THF --.

Page 34: line 6, change "thf" to -- THF --.

Page 34: line 24, change "remove" to -- removed --.

Page 34: line 33, change "thf" to -- THF --.

Page 35: line 7, change "thf" to -- THF --.

Page 35: line 16, change "allowed to stir" to  
 -- stirred --.

Page 35: line 17, delete -- mixture in --.

Page 35: line 20, change "(NC<sub>123</sub>H<sub>23</sub>)" to -- (NC<sub>12</sub>H<sub>23</sub>) --.

Page 35: lines 24-25, delete -- Dichloromethane was added  
 and the mixture was allowed to stir overnight. The solvent was  
 removed via vacuum. --.

Page 35: line 35, change "Li(C<sub>13</sub>H<sub>8</sub>)•Et<sub>2</sub>O" to  
 -- Li(C<sub>13</sub>H<sub>9</sub>)•Et<sub>2</sub>O --.

Page 36: line 9, change "thf" to -- THF --.

Page 37: line 3, change "D." to -- D: --.

Page 37: line 28, after "filtered" delete -- off --.

Page 37: line 30, change "mol." to -- mol). --.

Page 38: line 13, change "Li<sub>2</sub>[Me<sub>2</sub>Si(C<sub>13</sub>H<sub>8</sub>)(N-t-Bu)•Et<sub>2</sub>O"  
 to -- Li<sub>2</sub>[Me<sub>2</sub>Si(C<sub>13</sub>H<sub>8</sub>)(N-t-Bu)]•Et<sub>2</sub>O --.

Page 38: line 16, change "Li<sub>2</sub>[Me<sub>2</sub>Si(C<sub>13</sub>H<sub>8</sub>)(N-t-Bu)•Et<sub>2</sub>O"  
 to -- Li<sub>2</sub>[Me<sub>2</sub>Si(C<sub>13</sub>H<sub>8</sub>)(N-t-Bu)]•Et<sub>2</sub>O --.

Page 38: line 30, change "thf" to -- THF --.

Page 40: line 2, change "LiHN-2,6-i-PrC<sub>6</sub>H<sub>3</sub>" to  
 -- LiHN-2,6-i-Pr<sub>2</sub>C<sub>6</sub>H<sub>3</sub> --.

Page 40: line 8, change "Me<sub>2</sub>Si(MeC<sub>5</sub>H<sub>4</sub>)(HN-2,6-i-PrC<sub>6</sub>H<sub>3</sub>)" to  
 -- Me<sub>2</sub>Si(MeC<sub>5</sub>H<sub>4</sub>)(HN-2,6-i-Pr<sub>2</sub>C<sub>6</sub>H<sub>3</sub>) --.

Page 40: line 11, change " $\text{Me}_2\text{Si}(\text{MeC}_5\text{H}_4)(\text{HN}-2,6\text{-i-PrC}_6\text{H}_3)$ " to --  $\text{Me}_2\text{Si}(\text{MeC}_5\text{H}_4)(\text{HN}-2,6\text{-i-Pr}_2\text{C}_6\text{H}_3)$  --.

Page 40: line 15, change " $\text{Li}_2[\text{Me}_2\text{Si}(\text{MeC}_5\text{H}_3)(\text{N}-2,6\text{-i-PrC}_6\text{H}_3)]$ " to --  $\text{Li}_2[\text{Me}_2\text{Si}(\text{MeC}_5\text{H}_3)(\text{N}-2,6\text{-i-Pr}_2\text{C}_6\text{H}_3)]$  --.

Page 40: line 17, change " $\text{Li}_2[\text{Me}_2\text{Si}(\text{MeC}_5\text{H}_3)(\text{N}-2,6\text{-i-PrC}_6\text{H}_3)]$ " to --  $\text{Li}_2[\text{Me}_2\text{Si}(\text{MeC}_5\text{H}_3)(\text{N}-2,6\text{-i-Pr}_2\text{C}_6\text{H}_3)]$  --.

Page 40: line 27, change " $\text{Me}_2\text{Si}(\text{MeC}_5\text{H}_3)(\text{N}-2,6\text{-i-PrC}_6\text{H}_3)\text{TiCl}_2$ " to --  $\text{Me}_2\text{Si}(\text{MeC}_5\text{H}_3)(\text{N}-2,6\text{-i-Pr}_2\text{C}_6\text{H}_3)\text{TiCl}_2$  --.

Page 40: line 29, delete

-- Examples 1-10 of Polymerization --.

Page 41: lines 3-5, delete -- The toluene was removed via vacuum and toluene was added to precipitate the  $\text{LiCl}$ . --.

Page 42: between lines 18 and 19, insert and center

B2 Examples 1-10 of Polymerization

Page 42: line 22, after "already described" insert -- in U.S. Pat. No. 5,055,438, --.

Page 42: line 22, delete -- 100 ml of toluene, --.

Page 43: line 4, change "fand" to -- and --.

Page 46: line 15, change "prodiuct" to -- product --.

Page 48: line 1, change "IVB" to -- IV-B --.

Page 48: line 7, change "to" to -- at --.

Page 48: line 14, change "these" to -- those --.

IN THE CLAIMS

Please cancel claims 1-13.

Please add new claims 14-26.

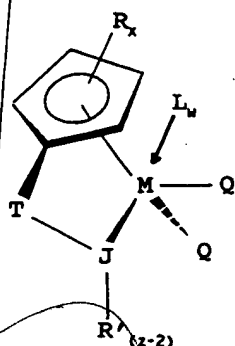
B3 14.(new) A process for producing crystalline poly- $\alpha$ -olefins comprising the steps of

B3  
Cont

(i) contacting an  $\alpha$ -olefin monomer at a temperature and pressure sufficient to polymerize such monomer with a catalyst system comprising:

(A) an alumoxane, and

(B) a Group IV-B transition metal component of the formula:



wherein M is Zr, Hf or Ti in its highest formal oxidation state;

R is a substituent group with "x" denoting the degree of substitution ( $x = 0, 1, 2, 3$  or  $4$ ) and each R is, independently, a radical selected from a group consisting of  $C_1$ - $C_{20}$  hydrocarbyl radicals, substituted  $C_1$ - $C_{20}$  hydrocarbyl radicals wherein one or more hydrogen atoms is replaced by a halogen radical, an amido radical, a phosphido radical, an alkoxy radical or other radical containing a Lewis acidic or basic functionality,  $C_1$ - $C_{20}$  hydrocarbyl-substituted metalloid radicals wherein the metalloid is selected from the Group IV-A of the Periodic Table of Elements, and halogen radicals, amido radicals, phosphido radicals, alkoxy radicals, alkylborido radicals or other radicals containing a Lewis acidic or basic functionality, or at least two adjacent R-groups are joined

B3  
Cont.

forming C<sub>4</sub>-C<sub>20</sub> ring to give a saturated or unsaturated polycyclic cyclopentadienyl ligand;

(JR'<sub>z-2</sub>) is a heteroatom ligand in which J is an element with a coordination number of three from Group V-A or an element with a coordination number of two from Group VI-A of the Periodic Table of Elements, and R' is a radical selected from a group consisting of C<sub>1</sub>-C<sub>20</sub> hydrocarbyl radicals, substituted C<sub>1</sub>-C<sub>20</sub> hydrocarbyl radicals where one or more hydrogen atom is replaced by a halogen radical, an amido radical, a phosphido radical, an alkoxy radical or other radical containing a Lewis acidic or basic functionality, and "z" is the coordination number of the element J;

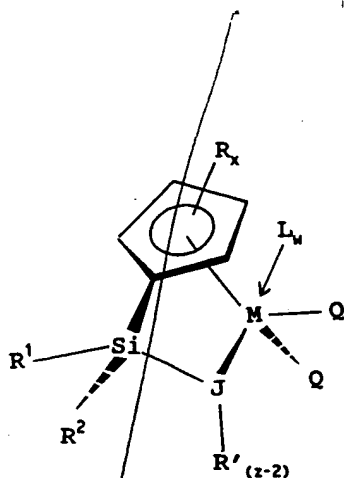
each Q is, independently, any univalent anionic ligand or two Q's are a divalent anionic chelating ligand, provided that Q is not a substituted or unsubstituted cyclopentadienyl ring;

T is a covalent bridging group containing a Group IV-A or V-A element;

L is a neutral Lewis base where "w" denotes a number from 0 to 3;

(ii) recovering a crystalline poly- $\alpha$ -olefin.

15.(new) The process of claim 14, wherein the Group IV-B transition metal component is of the formula:



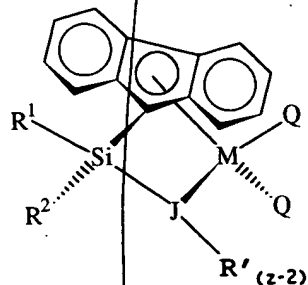
wherein  $R^1$  and  $R^2$  are, independently,  $C_1$  to  $C_{20}$  hydrocarbyl radicals, or substituted  $C_1$  to  $C_{20}$  hydrocarbyl radicals wherein one or more hydrogen atom is replaced by a halogen atom;  $R^1$  and  $R^2$  may also be joined forming a  $C_3$  to  $C_{20}$  ring.

16.(new) The process of claims 14 or 15 wherein J is nitrogen.

17.(new) The process of claim 16 wherein R is a  $C_1$  to  $C_{20}$  hydrocarbyl radical, "x" is 1 and  $R'$  is a  $C_6$  to  $C_{20}$  cyclohydrocarbyl radical or an aromatic radical.

18.(new) The process of claim 14 wherein the Group IV-B transition metal component is of the formula:

BB  
Cont

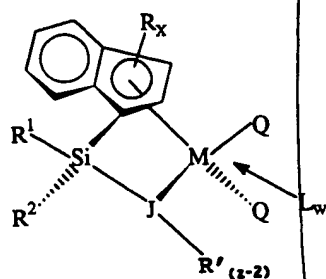


wherein  $R^1$  and  $R^2$  are independently,  $C_1$  to  $C_{20}$  hydrocarbyl radicals, or substituted  $C_1$  to  $C_{20}$  hydrocarbyl radicals wherein one or more hydrogen atoms is replaced by a halogen atom;  $R^1$  and  $R^2$  may also be joined forming a  $C_3$  to  $C_{20}$  ring.

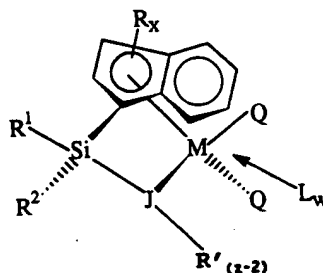
19.(new) The process of claim 18 wherein J is nitrogen.

20.(new) The process of claim 19 wherein  $R'$  is an alkyl radical or cycloalkyl radical.

21.(new) The process of claim 14 wherein the Group IV-B transition metal component is of the formula:



or





B3  
Cont'd

wherein "x" is 0, 1, or 2; R<sup>1</sup> and R<sup>2</sup> are independently C<sub>1</sub> to C<sub>20</sub> hydrocarbyl radicals, or substituted C<sub>1</sub> to C<sub>20</sub> hydrocarbyl radicals wherein one or more hydrogen atom is replaced by a halogen atom; R<sup>1</sup> and R<sup>2</sup> may also be joined forming a C<sub>3</sub> to C<sub>20</sub> ring.

22.(new) The process of claim 21 wherein J is nitrogen.

23.(new) The process of claim 22 wherein R' is a cycloalkyl radical.

24.(new) The process of claims 15, 18 or 21 wherein M is titanium.

25.(new) The process of claims 15 or 18 wherein M is hafnium or zirconium.

26.(new) The process of claim 14 wherein T is a covalent bridging group containing silicon, J is nitrogen and when R is an alkyl radical, R' is a cyclohydrocarbyl or aromatic radical, or when "x" is 2 or 4 and the R substituents form a polycyclic ring system, R' is an alkyl or cyclohydrocarbyl radical.